REMARKS/ARGUMENTS

The Office Action rejects Claim 52 under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement for being a single means claim. Applicants note that Section 8 of the Office Action posits that Claim 54 is the claim rejected under 35 U.S.C. § 112, first paragraph for being a single means claim. However, section 3 indicates that it is Claim 52 that is rejected under 35 U.S.C. § 112, first paragraph and the text of section 8 discusses recitations that are present in Claim 52 and not Claim 54. Therefore, Applicants are responding with the assumption that given the context of the discussion in the Office Action, the Office Action is in fact rejecting Claim 52 under 35 U.S.C. § 112, first paragraph. In any case, Applicants respectfully submit that Claim 54 is not a single means claim.

Claims 87 and 88 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Claims 36, 37, 46, 47, 49, 50, 52-55, 67, 68, 70, 71, 80, 81, 83, 84, 87, and 88 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Pat. No. 6,304,556 to Haas ("Haas"). Claims 38, 39, 40, 48, 56, 57, 58, 66, 72, 73, 74, and 82 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Haas in view of U.S. Pat. No. 6,751,455 to Acampora ("Acampora"). Claims 41-45, 51, 59-65, and 69 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

Applicants have amended independent Claims 36, 52, 53, 54, 87, and 88 to clarify the distinctions between the claimed invention and the cited references. In light of the amendments and subsequent remarks, Applicants respectfully submit that the claims are in condition for allowance.

The Rejection of Claim 52 under § 112, First Paragraph is Overcome

The Office Action rejects Claim 52 under 35 U.S.C. § 112, first paragraph as being directed to a single means claim. The Examiner posits that Claim 52 covers every conceivable means for achieving the stated purpose, but the specification discloses at most only those means known to the inventors.

Amended independent Claim 52 is directed to a communications unit comprising a <u>first mesh network tier sink node unit</u>. The first mesh network tier sink node unit comprises <u>a first transceiver</u> configured to wirelessly communicate with at least one of a plurality of first mesh network tier subscriber units in a first mesh network tier. The first mesh network tier sink node unit further comprises a <u>second transceiver</u> configured to communicate in a dedicated connection to a second mesh network tier subscriber unit configured to wirelessly communicate in a second mesh network tier.

Applicants initially note that a single-means claim is, "a claim drafted in 'means-plus-function format." *In re Hyatt,* 708 F.2d 712, 713 (Fed. Cir. 1983). Independent Claim 52 is <u>not drafted in means-plus-function format</u>. Thus, Applicants submit that a rejection of Claim 52 as a single means claim is improper.

Even assuming *in arguendo* that Claim 52 is drafted in a format analogous to means-plus-function format, the second paragraph of § 112 is meant to "sanction *any form* of claiming which particularly points out the invention." *In re Hyatt,* 708 F.2d 712, 714 (Fed. Cir. 1983). The Court further notes in the *Hyatt* decision that:

> The first sentence of the second paragraph of § 112 is essentially a requirement for *precision and definiteness* of claim language. If the scope of subject matter embraced by a claim is clear, and if the applicant has not otherwise indicated that he intends the claim to be of a different scope, then the claim does particularly point out and distinctly claim the subject matter which the applicant regards as his invention. *In re Hyatt,* 708 F.2d 712, 714 (Fed. Cir. 1983).

Applicants submit that the language of amended Claim 52 <u>does not cover every conceivable means for achieving the stated purpose</u>. Quite to the contrary, the language of amended Claim 52 is very precise and definite and recites a communications unit comprising a <u>first mesh network tier sink node unit</u>. The first mesh network tier sink node unit comprises <u>a first transceiver</u> configured to wirelessly communicate with at least one of a plurality of first mesh network tier subscriber units in a first mesh network tier. The first mesh network tier sink node unit further comprises <u>a second transceiver</u> configured to communicate in a dedicated connection to a second mesh network tier subscriber unit. Accordingly, the language of Claim 52 <u>does not</u>

cover every conceivable means for achieving the stated purpose, as it recites a specific embodiment of a communications unit. The scope of subject matter embraced by Claim 52 is clear and Applicants have not otherwise indicated an intent that the claim be of a different scope. Thus, the claim does particularly point out and distinctly claim the subject matter which the Applicants regard as their invention. Further, Claim 52 is directed to an embodiment of a communications unit disclosed in the specification. Accordingly, amended independent Claim 52 cannot comprise a single means claim as the Examiner submits. Applicants therefore respectfully submit that the rejection of independent Claim 52 under § 112, first paragraph is overcome.

The Rejection of Claims 87 and 88 under § 112, First Paragraph is Overcome

The Office Action rejects Claims 87 and 88 under §112, first paragraph, as failing to comply with the written description requirement. In this regard, the Office Action submits that the specification "does not properly support the software implementation specified in these claims." The Office Action further asserts that there is no discussion in the original specification, drawings, or claims of a processor, memory, or computer readable storage medium."

Applicants respectfully traverse this rejection. In this regard, page 6 of the originally filed PCT application discloses with reference to an ad-hoc mesh tier device that since the physical layer of the ad-hoc mesh tier (AMT) has similar radio frequency characteristics to a WLAN, interoperability can be achieved purely by additional software. This disclosure indicates that in one embodiment the device would operate under at least partial software control. As known in the art, a device operating under at least partial control of software requires a processor for executing the software and a memory and/or computer readable storage medium for storing the software. Accordingly, the embodiment described on page 6 implicitly discloses a processor for executing the software described on page 6 and a memory and/or computer readable storage medium for storing the software described on page 6, thus providing support for the recitations of Claims 87 and 88.

Applicants therefore respectfully submit that the rejection of Claims 87 and 88 under §112, first paragraph is overcome.

The Rejection of Claims 36, 52, 53, 54, 87, and 88 under §102 is Overcome

The Office Action submits that each of independent Claims 36, 52, 53, 87, and 88 is anticipated by Haas. Applicants have amended independent Claims 36, 52, 53, 87, and 88 to clarify that the second mesh network is a fixed network. For example, Claim 36 has been amended to recite "...and a second mesh network tier sink node unit configured to communicate with the second mesh network tier subscriber units over a fixed network." Applicants have made similar amendments to Claims 52, 53, 54, 87, and 88.

Support for this amendment is disclosed at several points in the description. For example page 21 first paragraph of the PCT published application describes that the use of a preconfigured mesh tier (PMT) protocol may take advantage of the fixed aspect of the network. Furthermore page 8 fourth paragraph of the PCT document assists us in determining that fixed does not mean a stationary or physical location fixed but that the network communications are fixed or network planned in contrast with the regular switching of the ad-hoc mesh tier network. In particular the paragraph describes, "Both the ad-hoc mesh tier (AMT) and preconfigured mesh tier (PMT) are mesh configurations. The AMT configuration is ad-hoc, meaning that devices may appear randomly and establish links to their geographical neighbours, thus mobile devices are supported though limitations exist to the communication during movement. The PMT configuration, in contrast, is a result of network planning. In the PMT, the devices are preferably stationary and their connections preferably fixed."

Briefly, Haas discloses a multi-tier ad-hoc unit where the nodes of the network (which the Office Action posits discloses a subscriber unit) are divided into groups or clusters of nodes communicating over a first tier of the network. Therefore the clusters are neighboring nodes capable of communicating directly or indirectly with each other. Each of the clusters of the first tier of the network has a node designated a cluster header node. These cluster header nodes (which the Office Action also posits discloses subscriber units), also operate within a second tier

of the network. The second tier of the network communicates to only other cluster header units for different clusters.

However, Haas only describes ad-hoc connections and specifically emphasizes the advantages of a purely ad-hoc multi-layer mesh network, thus teaching away from any fixed network implementation. Therefore, Applicants respectfully submit that Haas does not teach or suggest amended independent Claims 36, 52, 53, 54, 87, and 88, which recite that the second mesh network is a _fixed network_. Furthermore, none of the other cited references, taken alone or in combination with Haas, teach or suggest one of the mesh networks being a fixed network. Acompora, for example, discloses a further multi-tier ad-hoc network configuration and similarly to Haas teaches away from a fixed network implementation, disclosing, for example, in column 11, lines 4 to 6 that the ad-hoc network is dynamic and adaptive (i.e., the very opposite of a fixed network tier).

Applicants therefore respectfully submit that Claims 36, 52, 53, 54, 87, and 88 are patentably distinct from Haas such that the rejection of Claims 36, 52, 53, 54, 87, and 88 under §102(e) is overcome and Claims 36, 52, 53, 54, 87, and 88 are in condition for allowance.

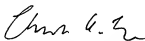The Rejection of the Dependent Claims is Overcome

Because each of the dependent claims includes each of the recitations of a respective independent base claim, Applicants further submit that the dependent claims are patentably distinguishable from the cited references, taken alone or in combination, for at least those reasons discussed above. Accordingly, applicants respectfully submit that the rejections of the dependent claims are overcome and the dependent claims are in condition for allowance.

CONCLUSION

In view of the amended claims and remarks presented above, it is respectfully submitted that all of the present claims of the present application are in condition for immediate allowance. It is therefore respectfully requested that a Notice of Allowance be issued. The Examiner is encouraged to contact Applicants' undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

Charles A. Leyes
Registration No. 61,317

Customer No. 00826
ALSTON & BIRD LLP
Bank of America Plaza
101 South Tryon Street, Suite 4000
Charlotte, NC 28280-4000
Tel Charlotte Office (704) 444-1000
Fax Charlotte Office (704) 444-1111

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